

FIG. 1

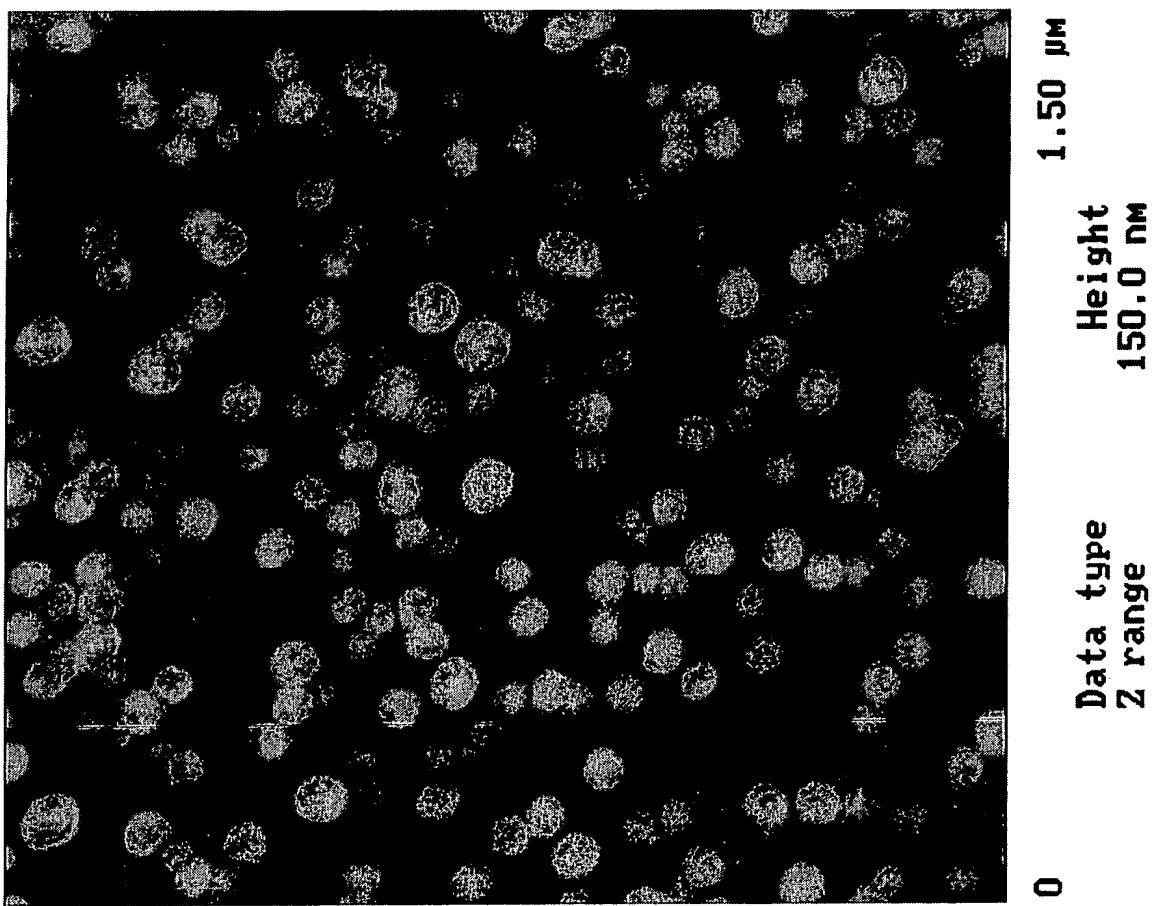


FIG. 2-1

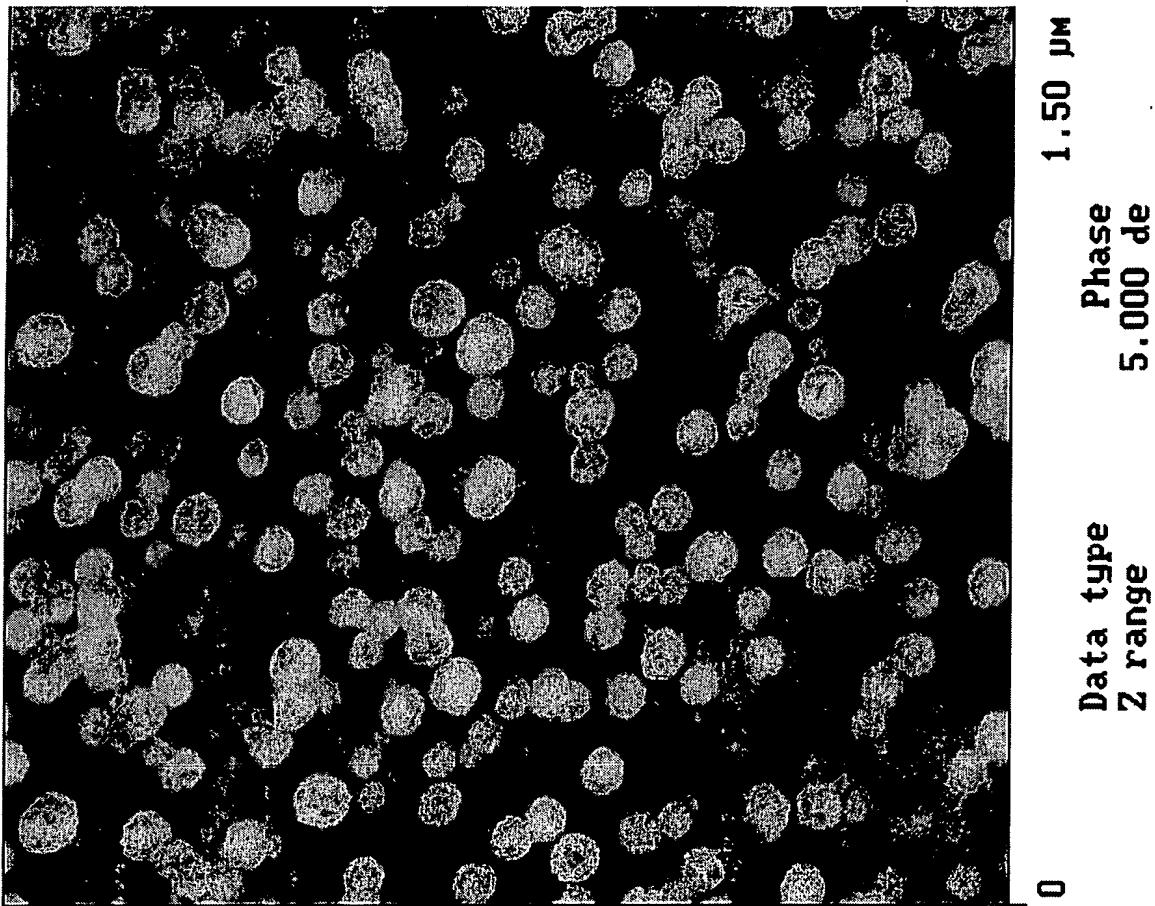


FIG. 2-2

Catalyst ( nanostructure morphology)	H <sub>cv</sub> (Oe)	H <sub>cp</sub> (Oe)	H <sub>cv</sub> - H <sub>cp</sub> (Oe)
*FePt (vertically aligned nanotubes)	802	543	259
Fe (nanotubes)	750	450	300
Ni (nanowires)	180	129	51
Fe (nanowires)	~520	~420	100
Co (nanoparticles)	~700	~500	~200
FeMn ( vertically aligned nanotubes)	~70	~60	~10
Metal-encapsulated carbon nanoparticles	Fe	626	-
	Co	703	-
	Ni	295.5	-
Co-encapsulated graphite-like carbon nanoparticles		370	-
Fe- trapped carbon-base nanotubes		500	-

H<sub>cv</sub> = coercive force at vertical direction to the substrate

H<sub>cp</sub> = coercive force at parallel direction to the substrate

\* the embodiments of present invention

FIG. 3

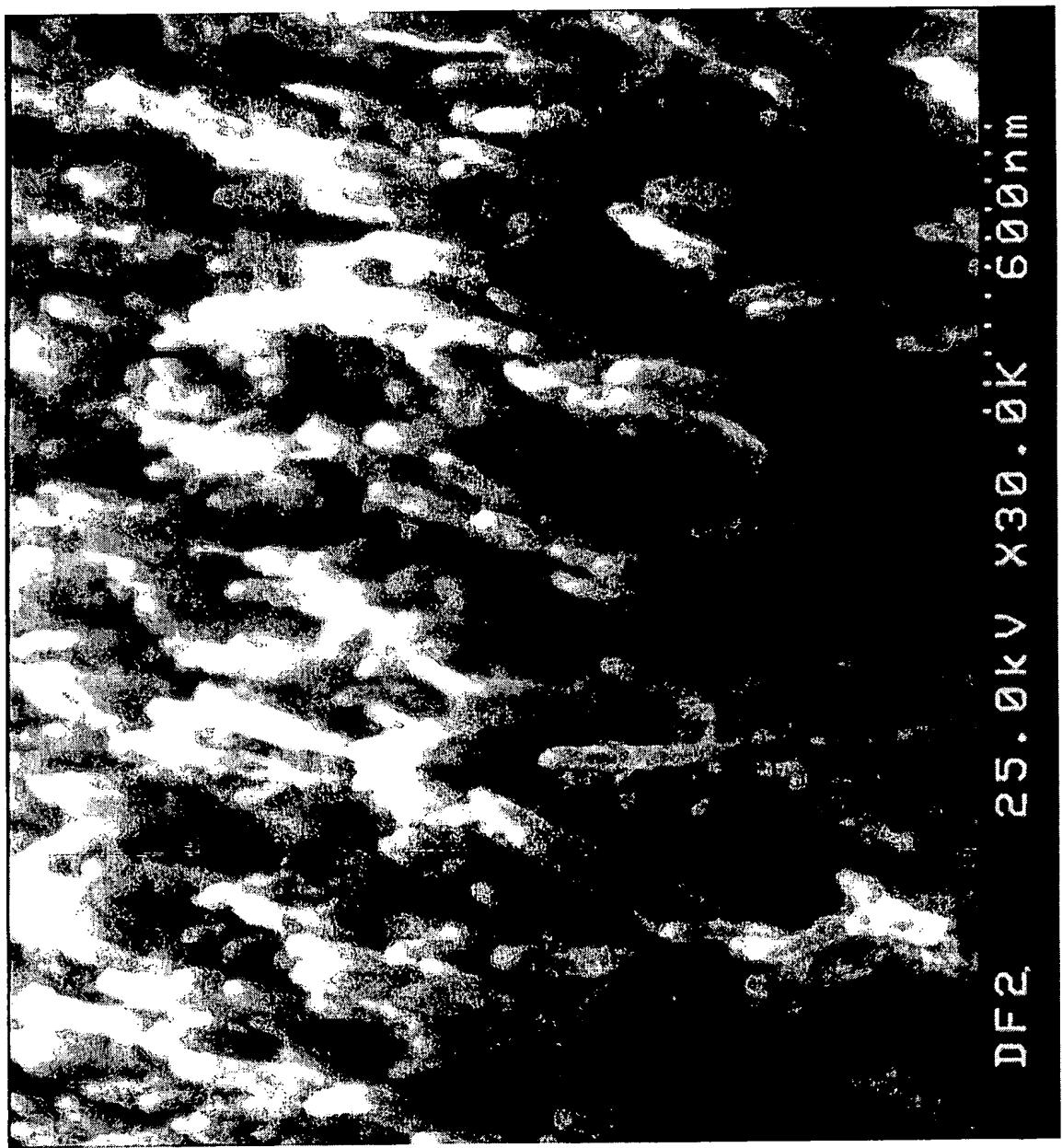


FIG. 4